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 IBM Technical Disclosure Bulletins

Term:

(sulfonated with styrene) same acrylonitrile

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Search History**Today's Date: 9/13/2000**

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT	(sulfonated with styrene) same acrylonitrile	199	<u>L11</u>
JPAB,EPAB,DWPI	l9 and acrylonitrile	7	<u>L10</u>
JPAB,EPAB,DWPI	sulfonated with styrene	227	<u>L9</u>
JPAB,EPAB,DWPI	inagaki and sony and polymer	31	<u>L8</u>
JPAB,EPAB,DWPI	inagaki and sony	152	<u>L7</u>
JPAB,EPAB,DWPI	inagaki	10993	<u>L6</u>
JPAB,EPAB,DWPI	5994423	1	<u>L5</u>
USPT	(abs with resin) same (sulfuric or sulfonic or sulfonated)	80	<u>L4</u>
USPT	(modified same ruber) same (absorb\$ or adsorb\$)	1	<u>L3</u>
USPT	(modified same ruber) and (134/\$)!.CCLS.	0	<u>L2</u>
USPT	(modified same ruber) and (134/\$)!.CCLS.	0	<u>L1</u>


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L10: Entry 6 of 7

File: DWPI

May 22, 1996

DERWENT-ACC-NO: 1997-490834

DERWENT-WEEK: 199746

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TITLE: Prepn. method of water soluble sulfonated phenylethylene copolymer

INVENTOR: YE, D

PATENT-ASSIGNEE:

ASSIGNEE

CODE

TIANJIN CHEM ENG RES INST MIN CHEM IND

TIANN

PRIORITY-DATA:

1994CN-0113637

November 9, 1994

PATENT-FAMILY:

PUB-NO

PUB-DATE

LANGUAGE

PAGES

MAIN-IPC

CN 1122812 A

May 22, 1996

N/A

005

C08F212/08

APPLICATION-DATA:

PUB-NO

APPL-DESCRIPTOR

APPL-NO

APPL-NO

CN 1122812A

November 9, 1994

1994CN-0113637

N/A

INT-CL (IPC): C08F 8/36; C08F 212/08

ABSTRACTED-PUB-NO: CN 1122812A

BASIC-ABSTRACT:

The water-soluble sulfonated styrene co-polymer used as anti-encrustation disperser in industrial water conditioning is prepared by water-phase suspension polymerization of styrene and acrylonitrile using a larger amount of initiator and after polymerization, is needed, no drying is needed, and the co-polymer undergoes sulfonated- hydrolysis directly with concentrated sulfuric acid to obtain water-soluble resultant. Advantages: low cost, good anti-encrustation, high heat-stability and can be used as slurry thinner in petroleum deep-well drilling.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: PREPARATION METHOD WATER SOLUBLE COPOLYMER

DERWENT-CLASS: A13 A97 H01

CPI-CODES: A04-C04B; A10-B05; A10-E12; A12-W11J; H01-E;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1714U

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1997-156650

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L8: Entry 23 of 95

File: DWPI

May 2, 1996

DERWENT-ACC-NO: 1996-210511

DERWENT-WEEK: 199622

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TITLE: Manure treatment in two stages, to release ammonia and concentrate slurry - by addition of lime, iron salts and polyelectrolyte to produce purified water and solids which are composted with control of carbon/nitrogen ratio and moisture content

INVENTOR: GROTH, M; KUEHN, H

PATENT-ASSIGNEE:

ASSIGNEE

KUEHN UMWELTPRODUKTE GMBH

CODE

KUEHN

PRIORITY-DATA: 1994DE-4444032 (December 10, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 4444032 C1	May 2, 1996		009	C05F003/00

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
DE 4444032C1	December 10, 1994	1994DE-4444032	

INT-CL (IPC): C02 F 1/00; C05 F 3/00

ABSTRACTED-PUB-NO: DE 4444032C

BASIC-ABSTRACT:

Animal waste is separated into solid and liquid phases by lime addition, releasing ammoniacal nitrogen, with iron salt addition for pptn. of orthophosphate, and polymer addition, to coagulate particulates.

The undiluted waste is treated continuously in two stages. Lime is added in the first reaction vessel, freeing ammonia, and the iron salt in the second, where polymer and dispersion water are also added. The mixt. undergoes flotation, sepg. into solid and cleaned liquid phases.

Also claimed is a device for the above procedure.

Pref., by addition of milk of lime, the pH is raised to 9.5. Removal of ammonia is assisted by stirring, with injection of microbubbles. Pref. the ammonia is intercepted above the first vessel in a receiver containing sulphuric acid. The slurry/lime mixt. is supplied to the second vessel by pump. An iron salt in the form of FeCl₃, FeClSO₄ and/or FeSO₄ is fed in, adjusting for a pH value of about 7, for further processing. To reduce the COD, the liquid phase pref. undergoes a biological and/or a chemical-physical after-treatment.

USE - Used to treat animal waste, separating it into a solid and purified liquid phase.

ADVANTAGE - The process is a simple, compact and economical means for the continuous treatment of slurry, reducing its volume and removing impurities. The ammonia liberated is removed effectively by stirring and microbubble injection, and odour is prevented by intercepting in sulphuric acid. Valuable compost is produced from the solids; during this process the water content may be influenced as described, as well as the carbon/nitrogen ratio. Mobile mounting of the equipment on a trailer or in a container allows flexible application. Supporting laboratory test analyses are presented.

CHOSEN-DRAWING: Dwg.2/4

TITLE-TERMS: MANURE TREAT TWO STAGE RELEASE AMMONIA CONCENTRATE SLURRY ADD LIME IRON SALT POLYELECTROLYTE PRODUCE PURIFICATION WATER SOLID COMPOST CONTROL CARBON NITROGEN RATIO MOIST CONTENT

DERWENT-CLASS: D16

CPI-CODES: D04-A01J; D05-A04A;

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1996-067265

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L6: Entry 15 of 95

File: USPT

Aug 21, 2001

DOCUMENT-IDENTIFIER: US 6277274 B1

TITLE: Method and apparatus for treating stormwater runoff

Detailed Description Text (24):

The preferred approximately 3-inch layer of mulch 9 covering the surface of the soil mixture 11 in the first chamber performs a variety of functions. The mulch layer serves the same function as in any garden or landscape; it helps to keep the upper layer of soil moist helping to protect the plants and soil from drying out. Retained moisture in the soil ensures the proper soil structure and environment for the soil bacteria and invertebrates, worms, insects and roots to function. The mulch layer provides a source of organic matter for the soil mixture necessary for healthy plant growth and a source of carbon for microbiological actions. Organic material is carried into the soil by leaching and by soil organism worms and other invertebrates. As important as the mulch's function to maintain a healthy environment for the plants and soil biota, it plays an important role as a treatment media for the removal of heavy metals from the contaminate water. Organic matter has a high affinity for the adsorption of the charged ions of heavy metals (Cu, Al, Zn, Fe, Pb, Cd, Ni, Cr, Mn and Co). This is commonly referred to as organic compelling. Organic matter contains humic and fulvic acids that are polyelectrolytes with high molecular weights. Within their chemical structures they contain carboxyl, phenolic, hydroxyl and methoxy functional groups that can form bonds with the ionic forms of heavy metals. The affinity of the metal ions toward the organic humic polyelectrolytes is dependant on pH and the particular variety metal ion. The organic mulch layer also has an affinity to attract other organic substances such as oil, grease gasoline, pesticides though weak covalent electrostatic attractive forces or absorption.

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L6: Entry 19 of 95

File: USPT

Dec 12, 2000

DOCUMENT-IDENTIFIER: US 6159380 A

TITLE: Water treatment process

Brief Summary Text (16):

One area of particular concern regarding wastewater treatment is the removal of heavy metals from wastewater. Heavy metals, such as copper, iron, silver, zinc, nickel, lead, cadmium and chromium pose severe health and environmental dangers due to the high toxicity of these metals. Zeolites (Perman, U.S. Pat. No. 5,071,587) and anionic polyelectrolytes (Monick, et al., U.S. Pat. No. 4,765,908) have been used to remove heavy metals from wastewater solutions.

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L6: Entry 28 of 95

File: USPT

May 28, 1996

DOCUMENT-IDENTIFIER: US 5520803 A

TITLE: Mobile waste water treatment device

Brief Summary Text (15):

One area of particular concern regarding wastewater treatment is the removal of heavy metals from wastewater. Heavy metals, such as copper, iron, silver, zinc, nickel, lead, cadmium and chromium pose severe health and environmental dangers due to the high toxicity of these metals. Zeolites (Perman, U.S. Pat. No. 5,071,587) and anionic polyelectrolytes (Monick, et al., U.S. Pat. No. 4,765,908) have been used to remove heavy metals from wastewater solutions.

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L6: Entry 30 of 95

File: USPT

Aug 9, 1994

DOCUMENT-IDENTIFIER: US 5336398 A

**** See image for Certificate of Correction ****

TITLE: Water treatment device

Brief Summary Text (15):

One area of particular concern regarding wastewater treatment is the removal of heavy metals from wastewater. Heavy metals, such as copper, iron, silver, zinc, nickel, lead, cadmium and chromium pose severe health and environmental dangers due to the high toxicity of these metals. Zeolites (Perman, U.S. Pat. No. 5,071,587) and anionic polyelectrolytes (Monick, et al., U.S. Pat. No. 4,765,908) have been used to remove heavy metals from wastewater solutions.

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L6: Entry 36 of 95

File: USPT

Dec 17, 1991

DOCUMENT-IDENTIFIER: US 5073272 A

TITLE: Method for using a flocculant powder

Brief Summary Text (28):

West German Patent No. 3,438,140 shows a process for removing heavy metals from waste water by strongly mixing the water under neutral pH conditions with an aqueous sodium aluminate solution in the presence of a polyelectrolyte.

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L6: Entry 38 of 95

File: USPT

Feb 20, 1990

DOCUMENT-IDENTIFIER: US 4902665 A

TITLE: Removal of heavy metals and heavy metal radioactive isotopes from liquids

Brief Summary Text (22):

Suitable heavy metal interactants include inorganic cation exchange materials such as zirconium phosphate; polyantimonic acid; a mixture of 20% of ammonium phosphotungstate in zirconium phosphate; silicic acid; tin oxide; titanium oxide; pertitanic acid; zirconium oxide; chromium oxide; ferric oxide; manganese oxide; chromium phosphate; zirconium silicophosphate; tin phosphate; lead sulphide; zinc sulfide; titanium phosphate; cobalt-potassium ferrocyanide; copper ferrocyanide; ferric ferrocyanide; and nickel ferrocyanide. Organic cation exchange resins also are suitable as heavy metal interactants, such as a sulfonated styrene divinyl benzene and other crosslinked polyelectrolytes generally having carboxylic (COO.sup.31) sulfonic (SO.sub.3.sup.-) or phosphate (PO.sub.3 H.sup.-) cation exchange groups. Other suitable interactants include sulfonated coal, e.g., ZEO-KARB, or any water-insoluble polymer having cation exchange groups, e.g., SO.sub.3.sup.-, COO.sup.-, PO.sub.3 H.sup.- or O.sup.-.

Brief Summary Text (37):

Other suitable heavy metal ion interactants include zirconium phosphate; polyantimonic acid; a mixture of 20% of ammonium phosphotungstate in zirconium phosphate; silicic acid; tin oxide; titanium oxide; pertitanic acid; zirconium oxide; chromium oxide; ferric oxide; manganese oxide; chromium phosphate; zirconium silicophosphate; tin phosphate; lead sulphide; zinc sulfide; titanium phosphate; cobaltpotassium ferrocyanide; copper ferrocyanide; ferric ferrocyanide; nickel ferrocyanide, finely ground organic cation exchange resins, such as a sulfonated styrene divinyl benzene; and other crosslinked polyelectrolytes generally having carboxylic (COO.sup.-), sulfonic (SO.sub.3.sup.-) phosphate (PO.sub.3 H.sup.-) or weak acid (O.sup.-) cation exchange groups. Other suitable interactants include sulfonated coal, e.g., ZEO-KARB, or any water-insoluble polymer having cation exchange groups, e.g., SO.sub.3.sup.-, COO.sup.-, PO.sub.3 H.sup.- or O.sup.31.

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L6: Entry 40 of 95

File: USPT

Aug 23, 1988

DOCUMENT-IDENTIFIER: US 4765908 A

TITLE: Process and composition for removing contaminants from wastewater

Detailed Description Text (28):

Without being bound by theory, it is believed that the metal salt, such as aluminum sulfate, removes small contaminant particles, especially organic contaminants, by acting as a coagulant or flocculant. The metal salt, such as aluminum sulfate, also helps to neutralize the pH of the system. The carrier-dispersing agents, such as silica gel, magnesium silicate, magnesium carbonate, marble dust, and ground mica prevent the caking of the treatment composition during the treatment process. The activated montmorillonite is a binder for the contaminants to encourage the removal of the contaminants from the wastewater. The polyelectrolyte is a catalyst for the treatment process, and it also aids in the splitting of emulsions contained within the wastewater. The calcium oxide, calcium hydroxide, or lime removes small contaminant particles, especially heavy metals, by flocculation. Although other caustics may be used in place of the calcium oxide, calcium hydroxide, or lime, it is believed that the calcium oxide, calcium hydroxide, or lime form hydroxides in the sludge to aid the flocculation. The bentonite removes the contaminants from the wastewater by adsorbing the contaminants.

Detailed Description Text (34):

Preferably, the polyelectrolyte is nonionic in character. However, other polyelectrolytes, such as cationic and anionic polyelectrolytes, may also be used. Anionic polyelectrolytes are especially useful when the contaminants include heavy metals. A suitable polyelectrolyte for use in the treatment composition is a polyacrylamide sold under the trademark "Celanese 1082."

CLAIMS:

13. A method of treating wastewater containing heavy metals to remove the heavy metals, comprising the steps of:

- (a) introducing into wastewater containing one or more heavy metals a treatment composition comprising naturally occurring montmorillonite containing at least 60% silica, bentonite selected from the group consisting of calcium bentonite, sodium bentonite, and combinations thereof, one or more flocculants, an alkali metal or alkaline earth metal carbonate, and a catalyst comprising zirconium and at least one polyelectrolyte;
- (b) mixing the treatment composition with the wastewater containing the heavy metals for a time sufficient to form a floc containing the heavy metals; and
- (c) filtering the wastewater to separate the floc into a sludge containing the heavy metals and a filtrate.

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L6: Entry 41 of 95

File: USPT

Oct 28, 1986

DOCUMENT-IDENTIFIER: US 4619744 A

TITLE: Recovery of heavy metals from aqueous solutions

CLAIMS:

6. A process in accordance with claim 1 further comprising:

(c) treating said participate with at least one regenerant under conditions suitable to cause dissociation of the polyelectrolyte-heavy metal precipitate, and

(d) recovering metal values from the solution produced by step (c) by electro deposition at a cathode.

8. A process for the recovery of heavy metals selected from the group consisting of elements with atomic numbers

39-51

57-84, and

89-117

from solution which comprises

(a) contacting said solution with at least one soluble, cross-linkable polyelectrolyte under conditions suitable to cause loading of said polyelectrolyte with said heavy metals,

(b) precipitating the heavy metal loaded polyelectrolyte produced in step (a), and

(c) recovering the precipitate produced in step (b).

10. A process in accordance with claim 8 wherein step (b) comprises adding sufficient quantities of a solid ion exchange resin to said heavy metal loaded polyelectrolyte to cause precipitation.

11. A process in accordance with claim 8 wherein step (b) comprises adding sufficient quantities of a second polyelectrolyte to cause precipitation of said heavy metal loaded polyelectrolyte, wherein said second polyelectrolyte is complimentary to said heavy metal loaded polyelectrolyte.

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L6: Entry 46 of 95

File: USPT

Feb 21, 1984

DOCUMENT-IDENTIFIER: US 4432880 A

TITLE: Process for the removal of heavy metals from aqueous solution

CLAIMS:

11. The process of claim 1, 2, 3, 4, 5 or 6 wherein the precipitated heavy metals are separated from the system with the aid of a coagulant polymer or polyelectrolyte.

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134/10.USPT.	802
"134/100.1".USPT.	189
"134/102.1".USPT.	421
"134/102.2".USPT.	167
"134/102.3".USPT.	97
"134/103.1".USPT.	221
"134/103.2".USPT.	284
"134/103.3".USPT.	51
(L3 AND ((134/\$)! CCLS.)).USPT.	3

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USPT	13 and ((134/\$)!.CCLS.)	3	<u>L4</u>
USPT	11 same (carboxylated or sulfonated or ammoniated)	807	<u>L3</u>
USPT	11 and ((134/\$)!.CCLS.)	143	<u>L2</u>
USPT	(styrene or butadiene or isoprene or conjugate\$) same acrylonitrile	44089	<u>L1</u>

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L11: Entry 117 of 199

File: USPT

Dec 27, 1988

DOCUMENT-IDENTIFIER: US 4794088 A

TITLE: Method and apparatus for separating and analyzing using liquid chromatography

DEPR:

With respect to the materials used for the preparation of the amphoteric ion exchange membrane, poly A into which cation exchange groups can be introduced, includes polymers of monomers having an aromatic ring which can be readily be sulfonated by a known method, such as styrene, .alpha.-methylstyrene, vinyl toluene, vinyl naphthalene, .alpha.-halogenostyrene, diphenylbutadiene, o-, m- or p-chlorostyrene, o-, m- or p-hydroxystyrene, and o-, m- or p-hydroxystyrene derivative (e.g. o-, m- or p-methoxystyrene, o-, m- or p-acetoxystyrene, or o-, m- or p-tert-butoxystyrene), and polymers of monomers into which carboxylic acid groups can readily be introduced by hydrolysis, for example, unsaturated carboxylates such as acrylates, methacrylates, crotonates and conjugated diene carboxylates; monomers having a cyano group such as acrylonitrile, methacrylonitrile or vinylidene cyanide; alkylidene malonates; or .alpha.-cyanoacrylates. Poly B into which anion exchange groups can be introduced, includes polymers of vinylpyridines, vinylpyrimidines, vinyl quinolines, vinyl carbazoles, and o-, m- or p-vinylphenylalkylene dialkylamines of the formula: ##STR1## wherein n is an integer of from 1 to 3, and each of R.sub.1 and R.sub.2 is an alkyl group having from 1 to 12 carbon atoms. These polymers can readily be quaternized with an alkyl halide compound. Further, poly C into which no ion exchange groups can be introduced, includes polymers of dienes such as butadiene, isoprene, pentadiene and cyclohexadiene. These polymers can readily be cross-linked by a known method. When no sulfonation is required in the process for the preparation of the amphoteric ion exchange membrane, poly C may be polymers of aromatic monomers such as styrene, vinyl toluene, .alpha.-methylstyrene and vinyl xylene.

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L8: Entry 9 of 31

File: JPAB

Sep 22, 1998

PUB-NO: JP410249195A
DOCUMENT-IDENTIFIER: JP 10249195 A
TITLE: WATER ABSORBING RESIN AND ITS PRODUCTION

PUBN-DATE: September 22, 1998

INVENTOR-INFORMATION:

NAME

INAGAKI, YASUSHI

WATANABE, HARUO

NOGUCHI, TSUTOMU

ASSIGNEE-INFORMATION:

NAME

SONY CORP

COUNTRY

N/A

APPL-NO: JP10004151

APPL-DATE: January 12, 1998

INT-CL (IPC): B01J 20/26; C08F 8/00; C08F 212/10; C08F 220/44; C08F 279/02; C08J
3/20

ABSTRACT:

PROBLEM TO BE SOLVED: To provide water absorbing resin superior in light and heat stabilities after aging and suited to outdoor use, and the production method.

SOLUTION: The water absorbing resin comprising primary a high polymer material introduced an ion group and containing a stabilizer is disclosed. The water absorbing resin is produced by adding the stabilizer to the high polymer material preliminarily introduced the ion group. Alternatively, the high polymer incorporating the stabilizer is produced by hydrolysis and further introduction of the ion group. By incorporating the stabilizer such as an antioxidant and a light stabilizer, the heat stability or light stability is improved and the weatherability of the water absorbing resin is greatly improved. Also by utilizing used resin waste material (generally these used resin water material incorporates the stabilizer) as raw material, effective use of resources is attained.

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L8: Entry 24 of 31

File: DWPI

Dec 28, 1999

DERWENT-ACC-NO: 1999-566779

DERWENT-WEEK: 200018

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TITLE: Purification treatment agent for purifying toxic substance contained in waste water, waste gas, soil - contains polymer which introduces ion group, along with styrene, conjugated diene and acrylonitrile

INVENTOR: INAGAKI, Y; ISHIKAWA, K ; KAWATE, Y ; NAGASAWA, H

PATENT-ASSIGNEE:

ASSIGNEE

CODE

SONY CORPSONY

PRIORITY-DATA:

1998JP-0046020

February 26, 1998

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
BR 9900815 A	December 28, 1999	N/A	000	C09K017/18
JP 11246858 A	September 14, 1999	N/A	008	C09K017/18
AU 9916418 A	September 9, 1999	N/A	000	B01J039/18
CN 1232728 A	October 27, 1999	N/A	000	B09B003/00

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
BR 9900815A	February 26, 1999	1999BR-0000815	N/A
JP 11246858A	February 26, 1998	1998JP-0046020	N/A
AU 9916418A	February 12, 1999	1999AU-0016418	N/A
CN 1232728A	February 26, 1999	1999CN-0103341	N/A

INT-CL (IPC): B01J 20/26; B01J 39/18; B09B 3/00; B09C 1/02; B09C 1/08; C02F 1/28; C08J 11/18; C09K 17/18; C09K 103/00

ABSTRACTED-PUB-NO: JP 11246858A

BASIC-ABSTRACT:

The purification treating agent (I) is composed of styrene and or conjugated diene and an acrylonitrile. A polymer which introduces an ion group is also included in the agent. The agent is made to contact the object containing the toxic substance. The toxic substances are removed by absorption.

USE - (I) is used for purifying toxic substances contained in waste water, waste gas or soil.

ADVANTAGE - Enables efficient purification by absorption removal of toxic substance.

CHOSEN-DRAWING: Dwg.1/3

TITLE-TERMS: PURIFICATION TREAT AGENT PURIFICATION TOXIC SUBSTANCE CONTAIN WASTE
WATER WASTE GAS SOIL CONTAIN POLYMER INTRODUCING ION GROUP STYRENE CONJUGATE DIENE
ACRYLONITRILE

DERWENT-CLASS: A12 A97 D15 P43

CPI-CODES: A04-C03; A12-W11E; A12-W11J; D04-A01F;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; G0828*R G0817 D01 D12 D10 D51 D54 D56 ; R00708 G0102
G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; R00817 G0475 G0260 G0022
D01 D12 D10 D26 D51 D53 D58 D83 F12 ; H0033 H0011 ; M9999 M2391 ; P0328 ; P1741 ;
P0088 Polymer Index [1.2] 018 ; ND01 ; Q9999 Q8753 ; Q9999 Q9370

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1999-165934

Non-CPI Secondary Accession Numbers: N1999-418988

WEST☐ Generate Collection

L8: Entry 21 of 31

File: DWPI

May 31, 2000

DERWENT-ACC-NO: 2000-378146

DERWENT-WEEK: 200033

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TITLE: Polymer aggregating agent comprises a polymer compound as a principal ingredient, and carbon black

INVENTOR: INAGAKI, Y; KUROMIYA, M ; NOGUCHI, T ; WATANABE, H

PATENT-ASSIGNEE:

ASSIGNEE

CODE

SONY CORPSONY

PRIORITY-DATA:

1996JP-0256383

September 27, 1996

1996JP-0177813

July 8, 1996

1996JP-0177814

July 8, 1996

PATENT-FAMILY:

PUB-NO

PUB-DATE

LANGUAGE

PAGES

MAIN-IPC

EP 1004548 A2

May 31, 2000

E

014

C02F001/56

DESIGNATED-STATES: DE FR GB

APPLICATION-DATA:

PUB-NO

APPL-DESCRIPTOR

APPL-NO

APPL-NO

EP 1004548A2

July 7, 1997

1997EP-0111476

Div ex

EP 1004548A2

July 7, 1997

1999EP-0124399

N/A

EP 1004548A2

N/A

EP 818420

Div ex

INT-CL (IPC): C02F 1/54; C02F 1/56

RELATED-ACC-NO: 1998-065229;2000-320144

ABSTRACTED-PUB-NO: EP 1004548A

BASIC-ABSTRACT:

NOVELTY - Polymer aggregating agent comprises a polymer compound as a principal ingredient, and in addition carbon black.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a polymer aggregate comprising a sulfonated styrene polymer as a principal ingredient and having a molecular weight of 150000-600000.

USE - Polymer aggregating agent.

ADVANTAGE - The polymer aggregating agent is highly potent in purifying a suspension, and reduces the water content of resulting cakes. The polymer electrolyte containing sulfonated polystyrene resin, in addition to the inorganic

pigment, is water soluble. The presence of inorganic pigment during sulfonation of the polystyrene inhibits cross-linking reactions, suppressing gelation of the product hence obtaining stable water soluble polymer electrolytes, and not generating unnecessary polymers.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: POLYMER AGGREGATE AGENT COMPRISE POLYMER COMPOUND PRINCIPAL
INGREDIENT CARBON BLACK

DERWENT-CLASS: A13 A14 A97 D15

CPI-CODES: A10-E12A; A12-M02; D04-A01B; D04-A01F;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; H0000 ; H0011*R ; M9999 M2799 ; P1741 ; P1752 Polymer Index [1.2] 018 ; ND01 ; N9999 N6906 ; Q9999 Q6951*R Q6939 ; Q9999 Q8753 ; Q9999 Q8764 ; B9999 B3521*R B3510 B3372 ; B9999 B5094 B4977 B4740 Polymer Index [1.3] 018 ; S* 6A ; H0157 Polymer Index [1.4] 018 ; R05085 D00 D09 C* 4A ; A999 A102 A077 ; A999 A771 ; A999 A180 ; A999 A760 ; S9999 S1456*R ; B9999 B5209 B5185 B4740 Polymer Index [1.5] 018 ; R01966 D00 F20 Ti 4B Tr O* 6A ; A999 A102 A077 ; A999 A771 ; A999 A180 ; A999 A760 ; A999 A088 A077 Polymer Index [2.1] 018 ; G0453*R G0260 G0022 D01 D12 D10 D26 D51 D53 F70 F93 ; K9325 ; K9632 K9621 ; H0000 ; H0011*R ; P0088 Polymer Index [2.2] 018 ; P0000 ; K9643 K9621 Polymer Index [2.3] 018 ; ND01 ; N9999 N6906 ; Q9999 Q6951*R Q6939 ; Q9999 Q8753 ; Q9999 Q8764 ; B9999 B3521*R B3510 B3372 Polymer Index [2.4] 018 ; R05085 D00 D09 C* 4A ; A999 A102 A077 ; A999 A771 ; A999 A180 ; A999 A760 ; S9999 S1456*R ; B9999 B5209 B5185 B4740 Polymer Index [2.5] 018 ; R01966 D00 F20 Ti 4B Tr O* 6A ; A999 A102 A077 ; A999 A771 ; A999 A180 ; A999 A760 ; A999 A088 A077

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-114587

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L8: Entry 12 of 31

File: JPAB

Apr 21, 1998

PUB-NO: JP410101873A

DOCUMENT-IDENTIFIER: JP 10101873 A

TITLE: POLYELECTROLYTE COMPOSITION AND ITS PRODUCTION

PUBN-DATE: April 21, 1998

INVENTOR-INFORMATION:

NAME

INAGAKI, YASUSHIWATANABE, HARUONOGUCHI, TSUTOMUKUROMIYA, YOSHIYUKI

ASSIGNEE-INFORMATION:

NAME

SONY CORP

COUNTRY

N/A

APPL-NO: JP08262041

APPL-DATE: October 2, 1996

INT-CL (IPC): C08L 25/18; C08F 8/24; C08F 8/36; C08K 5/00

ABSTRACT:

PROBLEM TO BE SOLVED: To produce a polyelectrolyte composition, capable of suppressing autoxidation reaction, excellent in stability with time and useful for a dispersing agent, a polymeric flocculant, etc., by including a water-soluble polystyrene-based polyelectrolyte and a stabilizer therein.

SOLUTION: This polyelectrolyte composition comprises (A) a water-soluble polystyrene-based polyelectrolyte containing a sulfonic acid (salt), a chloromethylated amine, carboxylic acid (salt), PO(OH)₂, etc., introduced therinto and (B) a stabilizer containing an antioxidant such as a phenolic antioxidant and a light stabilizer such as benzophenone. The component B is preferably compounded in an amount of 0.002-10 pts.wt. based on 100 pts.wt. component A and the component B is preferably added when introducing ionic groups into the styrene-based polymer or (co)polymerizing a water-soluble styrene-based monomer and producing the component A.

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L8: Entry 15 of 31

File: JPAB

Apr 21, 1998

PUB-NO: JP410101725A
DOCUMENT-IDENTIFIER: JP 10101725 A
TITLE: METHOD FOR SULFONATING AROMATIC POLYMER

PUBN-DATE: April 21, 1998

INVENTOR-INFORMATION:

NAME

INAGAKI, YASUSHI

WATANABE, HARUO

NOGUCHI, TSUTOMU

ASSIGNEE-INFORMATION:

NAME

SONY CORP

COUNTRY

N/A

APPL-NO: JP08262039

APPL-DATE: October 2, 1996

INT-CL (IPC): C08F 6/06; C08F 8/36; C08F 12/08

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a method for sulfonating an arom. polymer which can efficiently prepare a sulfonated polymer by adding a sulfonating agent to a solvent with an arom. polymer dissolved therein, conducting sulfonation, separating a solid as a reaction product from the solvent, returning the solvent, and utilizing the returned solvent for the sulfonation.

SOLUTION: A solvent contained in a solvent tank 1 is continuously fed through a pump 2 into a heating area (a), an arom. polymer having a mol.wt. of 100 to 50,000,000 is added and dissolved in the solvent to prepare a soln. having a concn. of 1 to 30wt.%. A Lewis base, in an amt. of 0.01 to 30mol% based on the arom. polymer, is added to the soln. Thereafter, a sulfonating agent, in an amt. of 0.1 to 30mol% based on the arom. polymer, is added thereto, followed by sulfonation to obtain a slurry of a solid as a reaction product. The solid as the reaction product is then fed into a solid-liquid separator 3 to separate the solid from the liquid. The solvent is returned to a dissolution tank 1 through a pump 4. On the other hand, the solid as the reaction product is dried in a drier 6 or fed into dissolution tanks 7, 8, where it is dissolved in an aq. alkaline soln. or water.

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L8: Entry 20 of 31

File: EPAB

Jan 14, 1998

PUB-NO: EP000818420A1

DOCUMENT-IDENTIFIER: EP 818420 A1

TITLE: A polymer electrolyte, a polymer aggregating agent prepared therefrom, and a disposal of waste water

PUBN-DATE: January 14, 1998

INVENTOR-INFORMATION:

NAME

COUNTRY

INAGAKI, YASUHITO

JP

NOGUUCHI, TSUTOMU

JP

WATANABE, HARUO

JP

KUROMIYA, MIYUKI

JP

ASSIGNEE-INFORMATION:

NAME

COUNTRY

SONY CORP

JP

APPL-NO: EP97111476

APPL-DATE: July 7, 1997

PRIORITY-DATA: JP17781396A (July 8, 1996)

INT-CL (IPC): C02F 1/56; C02F 1/54

EUR-CL (EPC): C02F001/54; C02F001/56

ABSTRACT:

ABSTRACT DATA NOT AVAILABLE

WEST☐ Generate Collection

L8: Entry 22 of 31

File: DWPI

May 3, 2000

DERWENT-ACC-NO: 2000-320144

DERWENT-WEEK: 200033

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TITLE: Treating waste water comprises adding polymer aggregating agent containing carbon black and removing aggregate by filtration

INVENTOR: INAGAKI, Y; KUROMIYA, M ; NOGUCHI, T ; WATANABE, H

PATENT-ASSIGNEE:

ASSIGNEE

CODE

SONY CORPSONY

PRIORITY-DATA:

1996JP-0256383

September 27, 1996

1996JP-0177813

July 8, 1996

1996JP-0177814

July 8, 1996

PATENT-FAMILY:

PUB-NO

PUB-DATE

LANGUAGE

PAGES

MAIN-IPC

EP 997438 A2

May 3, 2000

E

014

C02F001/56

DESIGNATED-STATES: DE FR GB

APPLICATION-DATA:

PUB-NO

APPL-DESCRIPTOR

APPL-NO

APPL-NO

EP 997438A2

July 7, 1997

1997EP-0111476

Div ex

EP 997438A2

July 7, 1997

1999EP-0124400

N/A

EP 997438A2

N/A

EP 818420

Div ex

INT-CL (IPC): C02F 1/54; C02F 1/56

RELATED-ACC-NO: 1998-065229

ABSTRACTED-PUB-NO: EP 997438A

BASIC-ABSTRACT:

NOVELTY - Treating waste water comprises adding polymer aggregating agent containing carbon black and removing aggregate by filtration.

USE - None given.

ADVANTAGE - The polymer dissolves readily in water, is highly potent in purifying a suspension and can reduce water content of produced cakes. Crosslinking reactions are inhibited, thereby suppressing gelation of the product.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: TREAT WASTE WATER COMPRISE ADD POLYMER AGGREGATE AGENT CONTAIN CARBON

BLACK REMOVE AGGREGATE FILTER

DERWENT-CLASS: A14 A97 D15

CPI-CODES: A04-A; A04-C; A08-C06; A08-E02; A12-W11J; D04-A01B; D04-A01F;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; G0453*R G0260 G0022 D01 D12 D10 D26 D51 D53 F70 F93 ;
S9999 S1616 S1605 ; H0000 ; H0011*R ; K9325 ; K9632 K9621 ; P0088 Polymer Index
[1.2] 018 ; S9999 S1616 S1605 ; K9643 K9621 ; P0000 Polymer Index [1.3] 018 ;
R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; S9999 S1616
S1605 ; H0000 ; H0011*R ; P1741 ; P1752 Polymer Index [1.4] 018 ; G0102*R G0022
D01 D12 D10 D18 D51 D53 D19 D76 D58 F61 ; S9999 S1616 S1605 ; H0000 ; H0011*R ;
P1741 Polymer Index [1.5] 018 ; G0237 G0102 G0022 D01 D12 D10 D18 D51 D53 D19 D31
D76 D58 D88 D61*R F60 Na 1A ; H0000 ; S9999 S1616 S1605 ; P1741 Polymer Index
[1.6] 018 ; ND01 ; Q9999 Q6951*R Q6939 ; B9999 B3521*R B3510 B3372 ; N9999 N5890
N5889 ; B9999 B5094 B4977 B4740 Polymer Index [1.7] 018 ; R01740 G2335 D00 F20 H*
O* 6A ; A999 A475

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-097191

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L8: Entry 23 of 31

File: DWPI

Dec 18, 1999

DERWENT-ACC-NO: 2000-107602

DERWENT-WEEK: 200022

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TITLE: Styrene polymer recycling process giving high purityINVENTOR: INAGAKI, Y; MIYASHITA, M ; NOGUCHI, T ; WATANABE, H

PATENT-ASSIGNEE:

ASSIGNEE

CODE

SONY CORPSONY

PRIORITY-DATA:

1998JP-0209432

July 24, 1998

1998JP-0171857

June 18, 1998

1998JP-0171858

June 18, 1998

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CA 2274397 A1	December 18, 1999	E	000	C08F112/08
DE 19927757 A1	December 23, 1999	N/A	000	C08L025/06
JP 2000006147	January 11, 2000	N/A	007	B29B017/00 A
JP 2000007821	February 8, 2000	N/A	008	C08J011/08 A
JP 2000038470				A

January 11, 2000 N/A 008 C08J011/08

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
CA 2274397A1	June 11, 1999	1999CA-2274397	N/A
DE	June 17, 1999	1999DE-1027757	N/A
JP2000006147A	June 18, 1998	1998JP-0171858	N/A
JP2000007821A			
JP2000038470A			

June 18, 1998 1998JP-0171857 N/A
July 24, 1998 1998JP-0209432 N/A

INT-CL (IPC): B03C 5/00; B09B 3/00; B29B 17/00; B29K 105/04; B29K 105/26; C08F 112/08; C08J 11/08; C08L 25/04; C08L 25/06; C08L 25/00; C10G 1/00

ABSTRACTED-PUB-NO: DE 19927757A

BASIC-ABSTRACT:

NOVELTY - A recycling process for styrene polymer without the use of filtration

involves contacting the polymer solution with a dehydration agent and/or electric field and removing insolubles and then solvent.

DETAILED DESCRIPTION - A recycling process (I) for styrene polymers comprises dissolving the polymer in an organic solvent to remove insoluble material, contacting the solution with a dehydration agent, applying an electric field and contacting with an adsorption agent and finally removing the solvent from the polymer. INDEPENDENT CLAIMS are included for an apparatus for the above process including separation units, and processes similar to that above but involving: (i) Contacting the solution with a dehydration agent as above, removing insoluble materials and finally removing the solvent from the polymer by heating and degassing (process (II)); and (ii) applying an electric field to the solution to remove insoluble materials and finally removing the solvent from the polymer by heating and degassing (process (III)); and (iii) contacting a polymer solution containing dyes with an adsorption agent, then removing the solvent from the polymer by heating and degassing (process (IV)).

USE - Enables the removal of moisture, sludge or dye.

ADVANTAGE - The obtained polystyrene is of higher quality than in the prior art and a separate filter is not used.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: STYRENE POLYMER RECYCLE PROCESS HIGH PURE

DERWENT-CLASS: A13 A35 P41 P43

CPI-CODES: A04-C02D; A10-G01A; A11-C03;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; H0000 ; H0011*R ; S9999 S1309*R ; K9950 ; S9999 S1627 S1605 ; P1741 ; P1752 Polymer Index [1.2] 018 ; ND07 ; N9999 N6906 ; N9999 N7283 ; J9999 J2915*R ; N9999 N6893 N6655 ; N9999 N5890 N5889 ; N9999 N6860 N6655 ; B9999 B3714 B3690 Polymer Index [1.3] 018 ; D01 F23 ; A999 A475 Polymer Index [1.4] 018 ; D01 D18*R ; A999 A475 Polymer Index [1.5] 018 ; D01 D02 D31 D76 D57 D58 D59 D89 D11 D10 D12 D14 D13 D54 D51 D03 Polymer Index [1.6] 018 ; A999 A022 A000 Polymer Index [2.1] 018 ; G0339*R G0260 G0022 D01 D12 D10 D26 D51 D53 D63 F41 F89 ; M9999 M2073 ; H0000 ; H0011*R ; A999 A782 ; A999 A022 A000 ; P0088 Polymer Index [2.2] 018 ; R01863*R D01 D11 D10 D23 D22 D31 D42 D50 D76 D86 F24 F29 F26 F34 H0293 P0599 G3623 ; R00446 G0282 G0271 G0260 G0022 D01 D12 D10 D26 D51 D53 D58 D60 D83 F36 F35 H0146 ; A999 A782 ; H0011*R ; A999 A022 A000 ; H0088 H0011 ; P0088 Polymer Index [2.3] 018 ; Q9999 Q9370 ; B9999 B3407 B3383 B3372

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-032544

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L8: Entry 25 of 31

File: DWPI

Mar 22, 2000

DERWENT-ACC-NO: 1999-395318

DERWENT-WEEK: 200032

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TITLE: Waste water treating agent and sludge dehydrant

INVENTOR: INAGAKI, Y; KANO, T ; KIUCHI, S ; WATANABE, H

PATENT-ASSIGNEE:

ASSIGNEE

CODE

SONY CORPSONY

LION CORP

LIOY

PRIORITY-DATA:

1998JP-0163844

June 11, 1998

1997JP-0351719

December 19, 1997

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CN 1248173 A	March 22, 2000	N/A	000	B01D021/01
WO 9932207 A1	July 1, 1999	J	058	B01D021/01
JP 11179400 A	July 6, 1999	N/A	010	C02F011/14
JP 11347309 A	December 21, 1999	N/A	010	B01D021/01
EP 976436 A1	February 2, 2000	E	000	B01D021/01

DESIGNATED-STATES: CN KR US AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
DE FR GB

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
CN 1248173A	December 18, 1998	1998CN-0802685	N/A
WO 9932207A1	December 18, 1998	1998WO-JP05753	N/A
JP 11179400A	December 19, 1997	1997JP-0351719	N/A
JP 11347309A	June 11, 1998	1998JP-0163844	N/A
EP 976436A1	December 18, 1998	1998EP-0961426	N/A
EP 976436A1	December 18, 1998	1998WO-JP05753	N/A
EP 976436A1	N/A	WO 9932207	Based on

INT-CL (IPC): B01D 21/01; C02F 1/52; C02F 1/56; C02F 11/14; C08F 8/36; C08F 12/30

ABSTRACTED-PUB-NO: WO 9932207A

BASIC-ABSTRACT:

NOVELTY - A waste water treating agent contains a sulfonated styrene polymer or its salt as the active ingredient.DETAILED DESCRIPTION - A 1 wt% aqueous solution of a sulphonated styrene polymer or its salt solution exhibits a viscosity at 25 deg. C of 10 - 20,000 mPa.s when

0.01 - 5N neutral salts is added to the solution.

USE - The agent is used for treating waste water or for dehydrating sludge.

ADVANTAGE - The invented agent and the methods for treating waste water and dehydrating sludge can be used independently of the types or the states of waste water and sludge.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: WASTE WATER TREAT AGENT SLUDGE DEHYDRATE

DERWENT-CLASS: A13 A18 A97 D15

CPI-CODES: A10-E12A; A12-W11J; D04-B10A;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; M9999 M2073 ; M9999 M2799 ; M9999 M2415 ; M9999 M2379*R ; L9999 L2391 ; L9999 L2379*R ; L9999 L2415 ; L9999 L2799 ; K9632 K9621 ; H0000 ; L9999 L2573 L2506 ; P1741 ; P1752 Polymer Index [1.2] 018 ; H0022 H0011 ; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; G0817*R D01 D51 D54 G0975*R D55 H0215 ; M9999 M2073 ; M9999 M2799 ; M9999 M2415 ; M9999 M2379*R ; L9999 L2391 ; L9999 L2379*R ; L9999 L2415 ; L9999 L2799 ; K9632 K9621 ; L9999 L2528 L2506 ; P1741 Polymer Index [1.3] 018 ; ND01 ; Q9999 Q8753 ; Q9999 Q8764 ; Q9999 Q6951*R Q6939 Polymer Index [1.4] 018 ; B9999 B3678 B3554 ; B9999 B3521*R B3510 B3372 ; N9999 N6906 ; B9999 B5094 B4977 B4740 Polymer Index [1.5] 018 ; R01514 D00 D67 F21 H* O* 6A Na 1A ; R01714 D00 D60 H* O* 6A S* ; H0226 Polymer Index [1.6] 018 ; Na 1A S* 6A ; H0157 Polymer Index [2.1] 018 ; G0373 G0340 G0339 G0260 G0022 D01 D12 D10 D26 D51 D53 D58 D63 F41 F89 D11 D87 F08 F07 ; H0000 ; H0011*R ; K9643 K9621 ; P0088 Polymer Index [2.2] 018 ; ND01 ; Q9999 Q8753 ; Q9999 Q8764 ; Q9999 Q6951*R Q6939

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1999-116264

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L11: Entry 39 of 199

File: USPT

Aug 4, 1998

DOCUMENT-IDENTIFIER: US 5789076 A

TITLE: Liquid-absorbent sheet and method for storing food using the same

DEPR:

A polymeric water absorbent may be contained in the liquid-absorbent material and may be arbitrarily selected from known materials which are capable of absorbing drips and has a satisfactory safety. A number of materials which generally have a three-dimensionally crosslinked structure are known as a polymeric water absorbent. Preferable examples include crosslinked products of polymers prepared by graft polymerizing a polysaccharide (e.g., starch or cellulose) with one or more substances selected from the group consisting of acrylic acid, methacrylic acid, acrylic acid salts, methacrylic acid salts, acrylic acid esters, methacrylic acid esters, acrylamides, methacrylamides, acrylonitrile, methacrylonitrile, maleic acid, sulfonated styrene, polyvinyl pyridine, and oligomers or cooligomers thereof, optionally followed by hydrolysis; crosslinked products of one or more substances selected from the group consisting of polyethylene oxide, polypropylene oxide, polyvinyl pyrrolidone, sulfonated polyethylene, polyvinyl pyridine, polyacrylic acid salts, polymethacrylic acid salts, polyacrylamide and polymethacrylamide; vinyl acetate/acrylic acid salt copolymer; isobutylene/maleic anhydride copolymer; polyvinyl alcohol/maleic acid copolymer; and crosslinked carboxymethylcellulose. Examples of commercially available polymeric water absorbents include PX-402A (a product of Showa Denko K.K.), Sunwet IM-300 (a product of Sanyo Chemical Industries, Ltd.), Aquakeep 10SH (a product of Seitetsu Kagaku Kogyo K.K.) and Aqualic CA (a product of Nippon Shokubai Kagaku Kogyo Co., Ltd.) may be cited.

WEST

Generate Collection

L11: Entry 143 of 199

File: USPT

Jan 10, 1984

DOCUMENT-IDENTIFIER: US 4425463 A

TITLE: Drilling fluids based on a mixture of sulfonated thermoplastic polymer and an amine-treated clay

DEPR:

The neutralized sulfonated thermoplastic polymers employed in the oil-based drilling muds are derived from polystyrene-type thermoplastic polymers which are selected from the group consisting essentially of polystyrene, poly-t-butyl-styrene, polychlorostyrene, polyalpha methyl styrene or co- or terpolymers of the aforementioned, with acrylonitrile or vinyl toluene.

CLPR:

7. A drilling mud according to claim 1 wherein said neutralized sulfonated thermoplastic is derived from a polymer selected from the group consisting of polystyrene, poly-t-butyl-styrene, polychlorostyrene, polyalpha methyl styrene, polyvinyl toluene and co- or terpolymers of styrene with acrylonitrile, methyl methacrylate and butadiene.

WEST

Generate Collection

L11: Entry 121 of 199

File: USPT

Aug 18, 1987

DOCUMENT-IDENTIFIER: US 4686776 A

TITLE: Dehydrating device

DEPR:

As the polymeric water absorber, there may be used materials capable of forming a gel by hydration, which are commercially used for sanitary products, paper diapers and soil modifiers. For example, there can be used products obtained by graft-polymerizing water-soluble polymerizable monomers or polymerizable monomers rendered water-soluble by hydrolysis, such as acrylic acid, methacrylic acid, an acrylic acid salt, a methacrylic acid salt, an acrylic acid ester, a methacrylic acid ester, acrylic acid amide, methacrylic acid amide, acrylonitrile, methacrylonitrile, maleic acid, sulfonated styrene and polyvinylpyridine, or oligomers or co-oligomers thereof, to polysaccharides such as starch and celluloses, hydrolyzing the resulting polymers according to need and three-dimensionally crosslinking the resulting hydrophilic polymers with crosslinking agents, and products obtained by three-dimensionally crosslinking hydrophilic polymers such as polyethylene oxide, polypropylene oxide, polyvinyl pyrrolidone, sulfonated polystyrene, polyvinyl pyridine, polyacrylic acid salts, polyacrylic acid amide, polymethacrylic acid salts and polymethacrylic acid amide with crosslinking agents. PX-402A supplied by Showa Denko, IM-1000 supplied by Sanyo Kasei Kogyo, Aquakeep 10SH supplied by Seitetsu Kagaku Kogyo and Aqualic CA supplied by Nippon Shokubai Kagaku Kogyo are commercially available. However, polymeric water absorbers that can be effectively used in the present invention are not limited to those exemplified above.

CLPR:

5. A dehydrating device as set forth in claim 4, wherein the polymerizable monomers are selected from the group consisting of acrylic acid, methacrylic acid, an acrylic acid salt, a methacrylic acid salt, an acrylic acid ester, a methacrylic acid ester, an acrylic acid amide, a methacrylic acid amide, acrylonitrile, methacrylonitrile, maleic acid, sulfonated styrene and polyvinyl pyridine, and oligomers and co-oligomers thereof.

WEST

Generate Collection

L11: Entry 125 of 199

File: USPT

Feb 24, 1987

DOCUMENT-IDENTIFIER: US 4645698 A

TITLE: Dehydrating and water-retaining sheet

DEPR:

The polymeric material capable of forming a hydrous gel which is usable for the present invention may be any such material conventionally used for a dehydrating sheet. For example, the polymeric materials capable of forming a hydrous gel can be those commercially used at present in the fields of sanitary supplies, diapers, soil conditioning agents and the like. As such a polymeric material, there are known, for example, tridimensional polymers prepared by graft polymerizing a polymerizable monomer which is water-soluble or becomes water-soluble on hydrolysis, such as acrylic acid, methacrylic acid, acrylic acid salts, methacrylic acid salts, acrylic esters, methacrylic esters, acrylic amide, methacrylic amide, acrylonitrile, methacrylonitrile, maleic acid, sulfonated styrene, and polyvinyl pyridine and oligomers or cooligomers thereof, with a polysaccharide such as starch and cellulose, by optionally hydrolyzing the resultant polymer and by cross-linking the hydrophilic polymer in the presence of a crosslinking agent, and another type of tridimensional polymers prepared by crosslinking a hydrophilic polymer, such as polyethylene oxide, polypropylene oxide, polyvinyl pyrrolidone, sulfonated polystyrene, polyvinyl pyridine, polyacrylic acid salts, polyacrylic amide, polymethacrylic acid salts, and polymethacrylic amide, in the presence of a crosslinking agent. As the commercially available products, there are, for example, known PX-402A manufactured by Showa Denko Kabushiki Kaisha, SUN WET IM-300 manufactured by Sanyo Kasei Kogyo Kabushiki Kaisha, and AQUAKEEP 10SH manufactured by Seitetsu Kagaku Kogyo Kabushiki Kaisha. As the above-mentioned crosslinking agent, there may be mentioned, for example, di- or tri-(metha)acrylic esters of polyols such as ethylene glycol, trimethylolpropane, glycerin, polyoxyethylene glycol, and polyoxypropylene glycol; unsaturated polyesters obtained from the reaction of the above-mentioned polyols with unsaturated acids such as maleic acid; bisacrylic amides such as N,N-methylenebisacrylic amide di- or tri-(metha)acrylic esters obtained from the reaction of polyepoxides with (metha)acrylic acid; di-(metha)acrylic acid carbamyl esters obtained from the reaction of polyisocyanates such as tolylene diisocyanate and hexamethylene diisocyanate with hydroxyethyl (metha)acrylate; allylated starch; and allylated cellulose. In some instance, bifunctional compounds capable of serving as a cross-linking agent under certain reaction conditions, such as methylolated (metha)acrylic amide, glyoxal, phthalic acid, adipic acid and ethylene glycol, calcium oxide, and polyvalent metal salts, such as zinc acetate, also may be used.

WEST☐ Generate Collection

L11: Entry 137 of 199

File: USPT

Feb 19, 1985

DOCUMENT-IDENTIFIER: US 4500652 A

TITLE: Process for producing cation exchange resins without swelling during
sulphonation process

BSPR:

In order to increase the ion exchange capacity of the styrene-divinylbenzene copolymer, a method which comprises sulfonating the copolymer particles while they are swollen with a swelling agent such as nitrobenzene, and a method which involves the use of a copolymer composed of styrene, divinylbenzene and acrylonitrile as the copolymer particles to be sulfonated have been proposed.

WEST

Generate Collection

L11: Entry 142 of 199

File: USPT

Jan 10, 1984

DOCUMENT-IDENTIFIER: US 4425461 A

TITLE: Drilling fluids based on a mixture of a sulfonated thermoplastic polymer and a sulfonated elastomeric polymer

BSPR:

The neutralized sulfonated thermoplastic polymers employed in the oil-based drilling muds are derived from polystyrene-type thermoplastic polymers which are selected from the group consisting of polystyrene, poly-t-butyl-styrene, polychlorostyrene, polyvinyl toluene, polyalpha-methyl styrene or co- or terpolymers of the aforementioned with each other or with acrylonitrile vinyl toluene or methymethacrylate.

CLPR:

8. A drilling mud according to claim 1 wherein said neutralized sulfonated thermoplastic is derived from a polymer selected from the group consisting of polystyrene, poly-t-butyl-styrene, polychlorostyrene, polyalpha methyl styrene, polyvinyl toluene and co- or terpolymers of styrene with vinyl toluene, acrylonitrile, methyl methacrylate and butadiene.

WEST

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L11: Entry 37 of 199

File: USPT

Sep 8, 1998

DOCUMENT-IDENTIFIER: US 5804241 A

TITLE: Liquid-absorbent sheet and method for storing food using the same

DEPR:

A polymeric water absorbent may be contained in the liquid-absorbent material and may be arbitrarily selected from known materials which are capable of absorbing drips and has a satisfactory safety. A number of materials which generally have a three-dimensionally crosslinked structure are known as a polymeric water absorbent. Preferable examples include crosslinked products of polymers prepared by graft polymerizing a polysaccharide (e.g., starch or cellulose) with one or more substances selected from the group consisting of acrylic acid, methacrylic acid, acrylic acid salts, methacrylic acid salts, acrylic acid esters, methacrylic acid esters, acrylamides, methacrylamides, acrylonitrile, methacrylonitrile, maleic acid, sulfonated styrene, polyvinyl pyridine, and oligomers or cooligomers thereof, optionally followed by hydrolysis; crosslinked products of one or more substances selected from the group consisting of polyethylene oxide, polypropylene oxide, polyvinyl pyrrolidone, sulfonated polyethylene, polyvinyl pyridine, polyacrylic acid salts, polymethacrylic acid salts, polyacrylamide and polymethacrylamide; vinyl acetate/acrylic acid salt copolymer; isobutylene/maleic anhydride copolymer; polyvinyl alcohol/maleic acid copolymer; and crosslinked carboxymethylcellulose. Examples of commercially available polymeric water absorbents include PX-402A (a product of Showa Denko K.K.), Sunwet IM-300 (a product of Sanyo Chemical Industries, Ltd.), Aquakeep 10SH (a product of Seitetsu Kagaku Kogyo K.K.) and Aqualic CA (a product of Nippon Shokubai Kagaku Kogyo Co., Ltd.) may be cited.

WEST

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L11: Entry 62 of 199

File: USPT

Jun 17, 1997

US-PAT-NO: 5639378

DOCUMENT-IDENTIFIER: US 5639378 A

TITLE: Method for removing components from solutions

DATE-ISSUED: June 17, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Heyl; Barbara L.	Atlanta	GA	N/A	N/A
Winterton; Lynn C.	Roswell	GA	N/A	N/A
Su; Kai C.	Alpharetta	GA	N/A	N/A
White; Jack C.	Stone Mountain	GA	N/A	N/A

ASSIGNEE INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Ciba-Geigy Corporation	Ardsley	NY	N/A	N/A	02

APPL-NO: 8/ 459769

DATE FILED: June 2, 1995

PARENT-CASE:

This is a divisional application of Ser. No. 08/024,224, filed Mar. 1, 1993 (now U.S. Pat. No. 5,496,471), which is a continuation-in-part of now abandoned application Ser. No. 07/873,215, filed Apr. 24, 1992 which is a continuation-in-part of now abandoned application Ser. No. 814,728, filed Dec. 19, 1991, which application is a division of application Ser. No. 671,967, filed Mar. 18, 1991 (now U.S. Pat. No. 5,080,800), which is a division of application Ser. No. 461,988, filed Jan. 8, 1990 (now U.S. Pat. No. 5,056,689).

INT-CL: [6] B01D 15/04

US-CL-ISSUED: 210/681; 210/683

US-CL-CURRENT: 210/681; 210/683

FIELD-OF-SEARCH: 210/681, 210/683, 210/685, 210/686

REF-CITED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> 2061958	November 1936	Chapman	215/37
<input type="checkbox"/> 2160602	May 1939	Nagel	65/45
<input type="checkbox"/> 2761833	September 1956	Ward	210/282
<input type="checkbox"/> 2869724	January 1959	McDevitt	210/282
<input type="checkbox"/> 3038610	June 1962	Hetherington	210/282
<input type="checkbox"/> 3346146	October 1967	Thompson	222/189

<input type="checkbox"/>	<u>3361304</u>	January 1968	Thompson	222/189
<input type="checkbox"/>	<u>3422993</u>	January 1969	Boehm et al.	222/190
<input type="checkbox"/>	<u>3449081</u>	June 1969	Hughes	210/282
<input type="checkbox"/>	<u>3622049</u>	November 1971	Thompson	222/190
<input type="checkbox"/>	<u>3760987</u>	September 1973	Meterhoefer	222/153
<input type="checkbox"/>	<u>3951798</u>	April 1976	Haldoupoulos	210/452
<input type="checkbox"/>	<u>3977560</u>	August 1976	Stumpf et al.	222/189
<input type="checkbox"/>	<u>3985271</u>	October 1976	Gardner	222/190
<input type="checkbox"/>	<u>3985648</u>	October 1976	Casolo	210/686
<input type="checkbox"/>	<u>4002168</u>	January 1977	Petterson	128/233
<input type="checkbox"/>	<u>4013410</u>	March 1977	Thomas et al.	21/58
<input type="checkbox"/>	<u>4018364</u>	April 1977	Wright	222/190
<input type="checkbox"/>	<u>4115272</u>	September 1978	Mukhamedyarov et al.	210/266
<input type="checkbox"/>	<u>4131544</u>	December 1978	Nasik	210/40
<input type="checkbox"/>	<u>4184615</u>	January 1980	Wright	222/190
<input type="checkbox"/>	<u>4231872</u>	November 1980	Wolfgang	210/93
<input type="checkbox"/>	<u>4250141</u>	February 1981	Lehmann et al.	422/44
<input type="checkbox"/>	<u>4259184</u>	March 1981	D'Arnal	210/85
<input type="checkbox"/>	<u>4276160</u>	June 1981	Donnert et al.	210/660
<input type="checkbox"/>	<u>4338194</u>	July 1982	Tanny	210/490
<input type="checkbox"/>	<u>4368081</u>	January 1983	Hata et al.	134/2
<input type="checkbox"/>	<u>4388229</u>	June 1983	Fu	252/549
<input type="checkbox"/>	<u>4396583</u>	August 1983	LeBkoeuf	422/301
<input type="checkbox"/>	<u>4463880</u>	August 1984	Kramer et al.	222/189
<input type="checkbox"/>	<u>4521375</u>	June 1985	Houlsby	422/29
<input type="checkbox"/>	<u>4529511</u>	July 1985	Breeden et al.	210/94
<input type="checkbox"/>	<u>4530963</u>	July 1985	DeVoe et al.	525/54.1
<input type="checkbox"/>	<u>4537683</u>	August 1985	Isacoff et al.	210/667
<input type="checkbox"/>	<u>4560491</u>	December 1985	Sherman	252/106
<input type="checkbox"/>	<u>4568517</u>	February 1986	Kaspar et al.	422/30
<input type="checkbox"/>	<u>4578187</u>	March 1986	Alhauser	210/93
<input type="checkbox"/>	<u>4711718</u>	December 1987	Nelson, Jr.	210/282
<input type="checkbox"/>	<u>4714550</u>	December 1987	Malson et al.	210/244
<input type="checkbox"/>	<u>4721624</u>	January 1988	Schumann	426/286
<input type="checkbox"/>	<u>4747954</u>	May 1988	Vaughn et al.	210/670
<input type="checkbox"/>	<u>4756710</u>	July 1988	Bondi et al.	424/449
<input type="checkbox"/>	<u>4756833</u>	July 1988	Schlossel	210/662
<input type="checkbox"/>	<u>4758351</u>	July 1988	Kern	210/688

<input type="checkbox"/> <u>4789475</u>	December 1988	Harte et al.	210/502.1
<input type="checkbox"/> <u>4792403</u>	December 1988	Togo et al.	210/692
<input type="checkbox"/> <u>4861760</u>	August 1989	Mazuel et al.	514/54
<input type="checkbox"/> <u>4917271</u>	April 1990	Kanner et al.	239/327
<input type="checkbox"/> <u>5013459</u>	May 1991	Gettings	210/282
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<input type="checkbox"/> <u>5080800</u>	January 1992	Heyl et al.	210/679
<input type="checkbox"/> <u>5496471</u>	March 1996	Heyl et al.	210/266

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FOREIGN-PAT-NO	PUBN-DATE	COUNTRY
427392	April 1938	BEX
0 366 534	May 1990	EPX
0 429 732	June 1991	EPX
0 439 999	August 1991	EPX
1227667	August 1960	FRX
1 367 129	August 1964	FRX
2 638 428	May 1990	FRX
U-8622273	July 1989	DEX
WO-A-82/00128	January 1982	WOX

ART-UNIT: 138

PRIMARY-EXAMINER: Cintins; Ivars

ATTY-AGENT-FIRM: Wenderoth, Lind & Ponack

ABSTRACT:

A dispensing device having a container body defining a solution retaining chamber therein, the container having an outlet for dispensing the solution from the chamber and means for removing a component from the solution as the solution is dispensed from the chamber through the container outlet. A method is provided for administering to a patient a pharmacologically active substance which substance is stable only at a pH value which is extreme in the acidic or alkaline region and at which pH value the substance cannot be administered without causing discomfort and/or injury to the patient. The substance is maintained in a solution or dispersion at the pH at which it is stable until the time of administration. At this time the substance is administered through a chamber containing an ion exchange resin which changes the pH of the solution or dispersion to a value which will not cause discomfort and/or injury to the patient.

6 Claims, 11 Drawing figures